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Translating employee driven innovation in Healthcare: bricolage strategies in a context of scarce resources

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Abstract

With top-down models of innovation failing to deliver, policy makers have proposed that staff working on the front line might be best placed to innovate solutions to the entrenched problems of healthcare. Drawing on a study of Employee Driven Innovation in the UK's National Health Service we explore the process through which staff innovate without the resources that support policy implementation; the translation of ideas from problematization to practice and the creative mobilisation of resources in a context of scarcity.

Impact

Our paper contributes to contemporary debates on innovation in healthcare and questions the potential for EDI in resources constrained public health. Examining the processual, collective and interested character of EDI, sheds light on the creative appropriation and repurposing of funding, labour, and space required to translate innovations in this context. It reveals how innovation by staff at the local level is ad-hoc and contingent on unpaid labour and alternative sources of funding. The emergence and sustainability of EDI cannot be assumed by policy makers without also recognising the need to provide resources to formally support and sustain innovations.

Introduction

Healthcare demands brought about by populations living longer with complex chronic conditions are an increasingly pressing challenge for governments and policy

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makers across Western nations. These demands, in the context of evolving political paradigms and attendant fiscal policies, shape the delivery of healthcare and public services (Hartley 2005; Ferlie et al 2013; Tuohy 1999). In many countries the public sector, and particularly health services, have been subject to regular reform throughout recent decades with wholesale structural changes including the introduction of new public management, marketization and largescale technological innovations (Osbourne and Brown 2013; Anonymous 1999; Hartley 2005; Ham 2014). Despite this, it is clear there has not yet been a 'structural fix' for the sector and the sustainability of public healthcare systems is increasingly called into question (Ham 2014; Fitzgerald and Mcdermott 2017). With old top-down models of reform and innovation failing to deliver effective change, stakeholders and policy makers have increasingly looked to 'bottom up' or employee driven innovation (EDI) as a way to resolve entrenched problems of healthcare (Department of Health 2011; Ham 2014). The development of new products and services by staff appears to be cost effective, a way to increase quality and efficiency utilising the resources already present i.e. the workforce, whilst tackling the challenge of implementation by enrolling those required to enact change into the heart of the innovation process. Yet, whilst EDI holds powerful appeal for scholars and policymakers alike (Høyrup 2012; Borins 2006), expecting employees to design and implement innovations poses challenges in a context in which multiple professional groups and stakeholders operate, practice is often highly regulated, resources are increasingly scarce and change has traditionally been imposed from on high (Ham 2014; Fitzgerald and Mcdermott 2017). How might those challenges be overcome so that ideas for service innovation coming from staff working at the coalface, are resourced, mobilised and implemented to provide new ways of delivering services?

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Debates on innovation in healthcare and the public sector more widely have proliferated in public administration, Organisation studies and Management literatures. Scholars have illuminated the specific issues of managing organisational change and innovation in a public sector context shedding light on the processual, networked, and interest-led nature of innovation in the sector, (Nahlinder and Eriksson 2018; Nicolini 2010; Fitzgerald and Mcdermott 2017; Pope et al 2006; Anonymous 2010). Yet, health innovation debates have focused primarily on the challenges associated with the adoption and diffusion of large-scale, policy interventions and reforms (Dopson 2005; Greenhalgh et al 2004). There is a need for better understanding of how innovative ideas might emerge from the bottom up, and how they might take root without the formal implementation infrastructure and funding provided by national policy programmes and interventions. Entrepreneurship debates offer useful conceptual tools for exploring how innovative ideas for products and services are designed and implemented in what are often contingent and resource constrained conditions (Baker and Nelson 2005). Scholars have drawn on Levi Strauss' notion of Bricolage (1966) as a metaphor to shed light on the process of innovating by acquiring adapting and repurposing whatever is at hand in a context of scarce resources (Garud and Karnoe 2003). As such bricolage offers a useful conceptual tool for understanding how innovation happens outside the context of top down reform and large-scale innovative programmes.

This article makes an important conceptual contribution to current debates on innovation in Health by integrating a translation approach with the notion of bricolage to illuminate the problem of how employee driven innovation happens from the bottom up in a resource constrained environment. It draws on an empirical study of EDI in the UK's National Health Service (NHS), whose publicly funded healthcare

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model has come under increasing strain from the twin challenges of an ageing population and increasing fiscal constraints. The three-year ethnographic study aimed to explore how innovations emerge in everyday work and learning practices of staff, and how they are embedded and sustained (Anonymous 2018; Anonymous 2019). Three case studies were selected; a healthcare intervention for homeless in-patients, a community owned GP (General Practice) surgery, and a programme to support young people with chronic conditions transition to adult services. These innovations were not the result of policy initiatives or management sponsored programmes, but involved staff at various levels, designing and implementing innovative solutions to inadequacies in local healthcare services. As such they provide an opportunity to understand how ideas for service innovation come about for those working on the front-line and how staff implement those ideas by mobilising resources.

Our article proceeds by briefly outlining how agendas in Healthcare innovation shifted from top down reform to EDI. We examine international scholarly debates on innovation in health showing how they provide an indispensable vocabulary for understanding the innovation process in a complex organisational context. We explore how the notion of bricolage has been used in entrepreneurship debates to understand innovation in a resource constrained context and suggest how this might provide a useful analytical framework for examining EDI. This background is followed by a description of our methodology and an outline of the three cases. Our findings make an important theoretical and empirical contribution to contemporary debates on innovation in healthcare. Exploring the process through which employees innovate - problematisation, the enrolling of interested actors and the implementation in practice - reveals how innovation translation is underpinned by 'bricolage', the

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creative appropriation and repurposing of diverse resources including funding, labour, and space. The process is ad-hoc and contingent and the sustainability of these innovations and their capacity to make positive long-term changes to healthcare cannot be assumed.

Background

Innovation in Health: From Top-down Reform to Employee Driven innovation

Tracing innovation and change in Healthcare over the past 50 years reveals a series of paradigm shifts. The late 20th century marked the beginning of a phase of fundamental changes to the public sector as it had developed previously, under the auspices of a largely administrative approach (Hartley, 2005). Public policy and subsequent legislation by various political parties around the Western world have imposed waves of reform grounded in private sector philosophies of managerialism, marketization, and metricisation (Anonymous, 1999; Osborne and Brown, 2013; Ashburner et al., 1996; Ferlie, 1994; Tuohy, 1999). The impact of these changes has been profound across the public sector, and across nations. The British NHS for example has been a paradigmatic test-bed, with the reorganisations coming so rapidly and regularly that it has been on 'a roller coaster of reform for at least 25 years' (Ham, 2014; 8).

By the turn of the 20th century a growing consensus had emerged that previous approaches to public sector reform had reached their limit (Leadbeater 2004). As governments sought to rationalise healthcare and increase efficiency in the face of ever-increasing costs (Pettigrew et al., 1992; Ashburner, 1996), the concept of 'innovation', offered a new and 'seductive' approach (Osborne and Brown, 2013: 1335). In healthcare, rapidly evolving technologies promised new ways to promote

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modernisation on a grand scale. The implementation of technological innovations in Telehealthcare and electronic data collection (Anonymous 2010; May et al., 2005) was widespread across Western nations. Nonetheless, whilst the nature of the policy solution had shifted from structural reform to technological interventions, the mode of implementation remained top-down. These innovations did not always deliver the anticipated benefits (Hartley, 2005). Diversity at the local level made nationwide schemes challenging to implement consistently (Pettigrew et al., 1992) and staff adoption of largescale technological innovations were poor (Anonymous 2010; Hartswood et al., 2003; May et al., 2005) or required considerable additional investment (Pope et al., 2013). Perceived failures in the top-down model of innovation, shifted interest from legislators and high-level policy makers, to those involved in delivering services on the ground.

In the UK's NHS, the promotion of employee driven innovation can be traced back to healthcare reforms of the early 2000s. The new focus on the 'talents of all the NHS workforce' was linked to a decentralisation agenda as a way to generate innovation and improve patient care, giving 'clinicians and managers the freedom to shape services around patients' needs' (Secretary of State for Health, 2000, p. 30). Since then successive administrations have sought to devolve responsibility to regional and local NHS organisations with clinicians and GPs in a new commissioning role best placed to understand the challenges and 'liberated' from top down control (Department of Health, 2010, p27). The National Medical Director of the NHS made this point explicitly in 2013: "Many of the problems we suffer in the NHS are solvable if we use the intellectual capital of the 1.4 million people who work in the service." (Bruce Keogh, BBC Radio 4, 29/5/13). However, the largely rhetorical policy debates do not address the question of what employee driven innovation looks like in practice

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or how employees might innovate in strictly governed and under-resourced organisational environments like the NHS in which change has traditionally happened via top-down and institutionally supported programmes.

Innovation, Translation and Bricolage

The intersecting fields of Public administration, Organisation studies, and Management studies, have housed long running and productive debates on organisational change and innovation in healthcare. The sophisticated models of the innovation process that have emerged, highlight the differences between public and private sector innovation such as the essential principals and the importance of 'Doing Using and Interacting' as well as 'Science and technology' forms (Nahlinder and Eriksson 2018). They acknowledge complex and diverse organisational contexts (Hargrave and Van de Ven 2006) and the multiple stakeholders - clinicians, patients, managers, policy makers, and professional bodies - implicated in that process (Ferlie et al., 2013; Pettigrew et al., 1992; Ashburner, 1996; Barlow, 2013). Their focus has been primarily on the implementation and diffusion of, on the one hand, the large-scale policy reforms and programmes that have characterised change in Healthcare (Ashburner, 1996), and on the other, drugs and medical devices that serve particular patients and specialisms (Barlow, 2013). Debates have grappled with the spread of ideas and practices across organisations, the problem of why some ideas are widely diffused and others not, and the sustaining of institutional change (Greenhalgh et al., 2013; Dopson, 2005; Fitzgerald and Mcdermott, 2017). Scholars focusing on technical innovation in Health (electronic patient records and various forms of tele-healthcare), have shown how interventions from the top must be adjusted to fit the local context; what matters in bringing new technologies into use are the everyday

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activities and priorities of the staff who (are supposed to) use them (Anonymous 2010; Pope et al., 2006 Buchannan et al., 2006).

In these debates, the notion of Translation (Callon, 1986) has provided an indispensable vocabulary for understanding innovation as a process rather than an outcome; illuminating the chain of transformations that takes place as ideas travel through time and across complex organisational contexts and settings (Nicolini, 2010; Fitzgerald and Mcdermott, 2017). The conceptual framing reveals how innovations are made and remade on their journey from 'problematisation', to implementation through the 'mobilisation' of 'indispensable' actors (Callon, 1986 p196). Rather than a linear model of innovation these moments of translation are understood as transformative, contingent and fortuitous, powered by the diverse interests of heterogeneous actors (clinicians, senior managers, administrators, policy makers) that are assembled, enrolled, and authorised to act (Nicolini, 2010). Service models, job descriptions, protocols, and research evidence are also enrolled in these networks, serving as intermediaries that formalise meanings, processes and practices (Nicolini, 2010).

These debates have provided sophisticated tools for understanding the networked and interested nature of innovation as a process. However, with a focus largely on top down policy innovation and diffusion there has been less attention paid to where new ideas, services and programmes arise from the ground up and the everyday work of staff in local contexts. Here we shift our attention to emergent debates on employee driven innovation that are concerned with how workplace learning, and everyday work practices contribute to the innovation capabilities of staff (Høyrup 2012; Anonymous 2012). Debates focus on the centrality of team based and collective working practices to the innovation process, not only those on the frontline

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or the shop floor but staff at all levels (Price et al., 2012 Borins, 2004), but distinguished from those specifically charged with innovation in research and development roles or policy teams (Kesting and Ulhoi, 2010; Hoyrup et al., 2012). Drawing on learning theory, scholars explore interplay between learning processes and organizational culture as staff seek to bridge gaps in practice. Innovation happens in the remaking of those work practices in both incremental and more transformative ways (Hoyrup, 2012; Price et al., 2012). Whilst EDI debates have tended to assume a commercial context or a generic organisational one, some studies have focused on EDI in the public sector. These highlight the ubiquity of EDI and its diversity of forms; from ad hoc and often incremental change or 'tinkering' that can lead to developments in service provision to more substantial breakthrough innovations producing new products and services. (Bugg and Bloch, 2016; Fuglsang, 2010; Borins, 2004).

The debates outlined above provide tools that can contribute to our understanding of EDI in healthcare, however, they do not provide a specific account of the resource constraints that characterise the public sector and healthcare (Borins 2004). To address this final piece of the jigsaw we turn to debates within the entrepreneurship literature which explore the invention and innovation of new commercial products and services. For scholars of entrepreneurship the notion of bricolage has provided a language for understanding various forms of entrepreneurial innovation and illuminating aspects of the innovation process that happen outside a research and development context. Bricolage, originating in the work of Levi Strauss (1966), describes the creative practices of individuals who address particular needs in their community, network or organisation by assembling, adapting and repurposing the 'stock' of resources they find around them. Unlike the engineer (or policy maker) who

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starts with clear project goals and the right tools and materials, the bricoleur's activity is guided by the fact that 'his universe of instruments is closed and the rules of his game are always to make do with 'whatever is at hand' (Lévi-Strauss, 1966, p18). Entrepreneurship scholars have highlighted practices of adapting, recombining, repurposing and the creative bundling of resources to innovate new goods and services; to 'create something from nothing' (Baker and Nelson, 2005; p333). They have explored how this happens in resource constrained environments such as small firms (Baker and Nelson, 2005), public sector organisations (Fuglsang 2010), social enterprises (Di Domenico, et al., 2010), or large firms where the innovation is 'intrapreneurial' and may challenge organisational business models (Halme et al., 2012). These explorations of bricolage, in different ways, highlight how organisational innovation is often but not always small scale, ad hoc, bottom up and also necessarily a collective endeavour involving the 'distributed agency' of a multiplicity of actors, requiring dialogue and negotiation to access knowledge and resources (Dujmedjian and Ruling, 2010; Garud and Karnoe, 2003).

These broad ranging debates provide a powerful conceptual framework for understanding our three cases of Employee Driven Innovation in the UKs NHS. First, characterising innovation as a process, and examining the moments of translation that constitute it - problematisation, enrolment, and implementation - provides a framework for understanding complex organisational contexts with multiple stakeholders. Second and related, the collective nature of the innovation process is bought to the fore as staff at all levels of the organisation and wider interested stakeholders are viewed as integral in the innovation process. Third, innovations are seen to take various forms from incremental changes in everyday practice to larger scale and more transformative interventions and new programmes. Fourth, bricolage

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as a metaphor highlights the creative mobilisation of resources found to hand that underpins and sustains the translation in the absence of formal support.

Methodology

Our three-year study was designed to examine how EDIs emerge in the everyday work and learning of staff in healthcare and how they are implemented, embedded and sustained. We chose a qualitative ethnographic case study approach (Yin 2009) that would enable us to construct a richly detailed picture of the innovation process illuminating the nuances brought by different NHS contexts and stakeholders.

Case selection

The main criteria for our cases were that they were healthcare services developed and implemented at a local level by staff in or on the periphery of the UK's NHS. We sought to capture a variety of locations (including the third sector), patient groups and services. Cases needed to be established enough that we could retrospectively study their emergence and implementation and observe their development and ongoing practice. A number of potential cases were identified from sources that included NHS 'Innovation Awards', media reports and researcher knowledge and networks. Three cases agreed to take part; Side by Side (SbS), an intervention for homeless in-patients, City Community Health Centre (CCHC), a community owned GP practice, and Moving Up (MUp), a transition programme for young people with chronic conditions (see Table 1). They were well-established but had been operating for different durations, and varied in size, scope, resources and organisational location. Their varied character illuminated diverse organisational contexts with

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different configurations of staff and stakeholders. Pseudonyms for the cases, locations and individual participants have been used throughout this article and details have been changed to protect participants' identity.

Table 1 here

Data collection

Qualitative ethnographic methods were used to collect rich and multi-layered data over a two-year period. Ethical approval was obtained from an NHS Research Ethics Committee prior to the study. Depth interviews were conducted with staff involved in the design and establishment of the innovation and those involved in the every-day work of delivering the service. At CCHC which had been operating for over 20 years we interviewed staff who no longer worked there but had been involved in the innovation process. Interviews were semi-structured and explored broad questions: how the innovation came about, how it was developed, implemented and sustained, the stakeholders involved in delivering it and the challenges for the future. In each case the researcher also engaged in observation of the day-to-day work of delivering the innovation, internal meetings and organisational events. These provided an opportunity to observe first-hand the way services were delivered on the ground, the internal politics and strategies, and the way the case presented itself. Finally, documentary data were collected from each case including annual reports, forms, policies and protocols and online publicity material. These provided further opportunity to understand how the innovation was delivered and presented.

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Interviews were recorded and transcribed verbatim. Some more informal interviews were not recorded and were written up as field notes, as were all the observations. One member of the research team took the lead in organising and conducting fieldwork in each case, with other members involved in data collection in all three cases. We conducted 40 interviews and amassed around 60 hours of observation data across our three cases.

Data analysis

The analysis of the data involved three stages. Case study reports produced by the case lead drawing on fieldnotes, documents and recollections, gave an account of the nature of the innovation, the organisation, the work and the learning. These provided a snapshot of each case. Transcripts and field and observation notes were then imported into Nvivo 10 (later upgraded to 11) and coded by all team members to broad cross cutting themes that included 'organisational identity and history', 'organisational structure', 'everyday work', 'roles relationships and networks', and 'resources'. These were generated at a project awayday involving coding and discussion that helped ensure consistency. In-depth coding happened later with conceptual free nodes and sub nodes created in relation to analysis for specific outputs. This article draws on transcripts and field notes related to the participants who were involved in establishing each of our innovation cases, and coded data on organisational history, relationships and networks, resources and bricolage and the moments of translation. These enabled us to explore how the innovation emerged and how it was implemented and to explore specifically the resources that were mobilised in this process.

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Translation and bricolage in employee driven innovation

Our findings are divided into three parts. The first two explore the innovation process for our cases; the problematisation - how a gap or failing in service provision was framed collaboratively, how interested actors were identified, and solutions developed - and implementation - how alliances and conflicts between actors' interests were negotiated to deliver a new service. In the third part we draw attention to the bricolage activities of key actors that underpinned the translation; specifically, the protracted appropriation of internal and external resources that were adapted to support and sustain the innovation.

Problematisation; evidencing gaps, finding solutions and identifying interest

At City Community Centre, problematisation was a collaborative process. Katie, a community worker, and her mostly unpaid colleagues (artists, activists and volunteers) became increasingly concerned about the failure of statutory services to meet the needs of their local community. The specific case of poor NHS care provided to a mother with young children who died from cancer unsupported by primary healthcare services, was the trigger for their concerns. Research they conducted in their neighbourhood revealed poor practice, squalid settings, and corruption in GP surgeries. They framed 'the problem' as being the quality of local primary care; its inability to adequately serve an already marginalised community. Problematizing primary care in this way enabled Katie and colleagues to position themselves as indispensable actors in the development of a solution. Katie recalls meetings where they discussed how they could '*do it better'* and asked themselves '*what would it be like if we provided those services*?'. Despite little experience in providing healthcare, they sketched out ideas for their own GP surgery within their

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community centre that would enable them to draw on their community development practice and deliver quality primary healthcare in a different way to their community.

In the case of Moving Up (MUp) the problematisation was initiated by Seema, a consultant working at a large university hospital. As part of her role on a regulatory working-group at the hospital she volunteered to investigate the transition of young people with chronic conditions to adult services, an issue she already had experience of in her own specialism. Her initial review of the research evidence revealed poor outcomes (increased morbidity and mortality rates) for patients caused partly by a disengagement from services following this transition. Seema framed 'the problem' as the absence of targeted transition support for young people and began to work on its resolution; the development and implementation of a generic transitions programme that addressed current NHS guidelines. She sought out colleagues interested in working with her to develop the programme, specifically specialist nurses in relevant disciplines who were already under pressure to improve outcomes in this area: *'I said to the cardiac team, "Look, you've got to get transition. Instead of us all doing separate policies, why don't we join our work together, […] develop something"'*

Seema established a small 'steering-group' of nurses who were enrolled in the problematisation based on the issues they faced in practice and who would work with her to develop the innovation. The generic programme that they produced, Moving Up (MUp), involved clinical staff (clinicians and nurses) delivering a questionnaire to young patients with chronic conditions to help them prepare for the transition to adult services. It also met UK guidelines, facilitating its potential integration into existing practice within a range of relevant specialism at the hospital and more widely.

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In the case of Side by Side (SbS), Liam, a senior clinician in his Trust, initiated the problematisation. Concerned by the death of a homeless man on the steps of his hospital, he commissioned some research on homeless patients' care at the Trust. The report highlighted areas of concern including frequent Accident and Emergency visits, 'bed blocking' and revolving-door readmission. The evidence enabled Liam to frame 'the problem' as poor quality and fragmented services for homeless people in secondary care, and to highlight cost implications that legitimised a need for improvements. Liam investigated what was being done in other locations and sought actors who would be indispensable to the design of a solution, based on their expertise and interest but also a characteristic he saw as vital to high quality care – compassion. He identified Simon, a GP serving homeless patients in another city and arranged a meeting to establish his interest;

What persuaded me about him was that he had two rooms for in-patient homeless people on the ground floor, with two kennels. […] So I said, "This guy cares."

Liam also enrolled Frances, a retired nurse he had previously worked with whose compassion he valued. Frances and Simon were tasked with designing an intervention for homeless in-patients. Simon recalls *'[Liam] just sort of gave us the freedom to see what we could come up with in a hospital setting'*. The innovation that emerged through their discussions involved a multidisciplinary team providing holistic treatment to support homeless in-patients. Within this team they envisaged ex-homeless staff providing key support to patients as 'experts by experience' and SbS workers in a coordination role.

The three innovations that emerged from the problematisation process were, at least initially, localised solutions to immediate problems framed by a group of interested

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actors. However, their forms and dimensions were reshaped through further translation as the assembled actors sought to implement the innovation.

Implementation: alliances and conflicts

In all three cases the translation process involved a core group of staff in enrolling and mobilising a wider group of stakeholders and mediators and revealed conflicts of interest which had to be navigated for implementation to happen. At the Community Centre, the plan to build and run an on-site health centre was ambitious. There was no procedural precedent within the NHS and they required land and capital for buildings and GPs to staff it. Gaining the allegiance of indispensable actors - the local council and local health authority (LHA) - was crucial but revealed differences in interpreting 'the problem' and conflicts of interest regarding the solution. Suggesting the necessity of a new health centre drew attention to '*the inadequacy of the way [LHA] were organising their resources*' (Katie). Whilst the LHA eventually allowed the health centre to go-ahead they refused the translation in various ways including awarding the contract to existing local GPs, those same GPs Community Centre actors had defined as part of the problem. Katie and her colleagues engaged in strategic actions to try to enrol LHA actors in their vision for the innovation. Following the departure of the initial GPs, they persuaded two 'progressive' and sympathetic GPs from a neighbouring borough to apply for the contract, invited the LHA to hold the GP interviews at the centre and provided lunch. Inviting herself to the lunch, Katie described how she 'took the opportunity to say to the interview panel *"..here's the things that matter really most to us about the kind of GPs that you appoint…"*'. These strategies were successful and the practice was eventually staffed by the preferred GPs who were enrolled into the innovation and prepared to incorporate the centre's ethos into their practice.

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Implementing SbS in Liam's hospital, Simon and Frances faced similar conflicts between the aims of their programme and the interests of statutory actors and existing organisational practices. They found their problematisation initially prevented the alignment of stakeholder interests. Simon noted '*the fact that we were there talking about compassion implied that there was a lack of compassion in the current service, which wasn't something people wanted to hear.*' Equally they discovered the holistic multi-disciplinary approach of their intervention did not mesh with the '*protocol-driven medical reductionist models'* that Simon identified in A and E and acute wards. Staff from various occupational groups working within the hospital were reluctant to work as part of the new multidisciplinary team: '*they had a housing advisor who was very good, very well-regarded; he didn't want us there because we were on his turf*'. (Simon). Overstretched staff were unclear about the benefits of the programme to them and resisted the innovation: *'there was actually a petition up at one stage to get rid of us*' (Simon). Liam drew on his seniority at the hospital to resolve these conflicts taking '*irate phone-calls from consultants' and 'smoothing things over'*. His interventions and the persistence of the team eventually paid off as various stakeholders saw how the program could benefit them and SbS became the accepted model for supporting homeless in-patients at the hospital.

For Seema and the nurses on the steering group, MUp was initially piloted in their own specialisms and then promoted and implemented in other specialism at the trust and in other hospitals. Whilst the programme had been designed to be user friendly it required clinicians to incorporate the questionnaires into their existing meetings and clinics with young patients. The work in training and enrolling both clinical and administrative staff meant; '*It was a slow process. we knew we were never going to win instantly with it'*, (Lizzy specialist nurse). Various strategies were deployed to

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encourage adoption and use. The nurses targeted receptive specialism and consultants first to '*get them on board', 'hopefully then their influence starts spreading out a bit more'* (Lizzy specialist Nurse). Agreement to adopt the programme did not always translate to practice. In one specialism the nurses advertised the programme directly to patients in the waiting area, creating 'consumer demand' which made it more difficult for clinicians to resist the programme.

In each case identifying the moments of translation illuminates the collective and interested character of these innovations. What has been taken for granted, is how these moments of translation were possible; how they were resourced in a context of resource constraint and without implementation budgets and infrastructure.

Bricolage: appropriating and repurposing resources

For key actors in each case, bricolage was a necessary activity they used to mobilise resources to support the moments of translation of the innovation. The resources they found to hand ranged from funding, space, labour and organisational structures and those they were able to acquire had to be creatively repurposed and adapted. The bricolage was different in each case, shaped by the requirements and constraints of specific organisational contexts and the needs of the innovation.

The problematisation stage during which actors designed solutions and established stakeholder interests, required space and time for staff to meet and discuss ideas to improve services, to assess the interests of other actors and to enrol them in the process. The scope to have these discussions within or outside existing roles varied considerably. At City Community Centre, fluid roles and embedded unpaid work provided flexibility and capacity to have conversations and conduct local research that provided the foundations for their innovation design. As an organisation going

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through a period of development, centre workers and activists saw innovation of services as intrinsic to their role and the focus of their meetings. For the MUp and SbS innovations on the other hand, stretched clinical staff found it hard to fit the translation work into their existing roles. Both Seema and Liam engaged in an intense process of bricolage to mobilise resources that would facilitate problematisation.

Seema's application for financial support from the Hospital to support the programme was refused on the grounds that, as she was already providing the service, it was not a funding priority. She focused instead on assembling a steering group of specialist nurses and repurposing their labour. Enrolling nurses onto the steering group involved a tacit understanding that, as interested actors, they integrate work on the innovation within their existing roles and responsibilities. They found it difficult to get it done in 'work time' and acknowledged that they 'donated' their labour in after-hours work on the innovation… '*there's lots of (laughs), working in our own time, we've had to do a lot of that, …stay late*, (Kerry, specialist nurse). However, it created an ongoing tension for the nurses by taking time away from the tasks they were expected to perform. Given the substantial time pressures, designing a transition programme from scratch was not feasible. A second element of bricolage arose from the steering group researching transition practice across the hospital and globally. This revealed several existing programmes that could be adapted to provide a generic model... '*we simplified lots of programmes out there and took the best of those people'* (Seema). This repurposing involved ensuring the programme met NHS guidelines and was packed in an '*easy to use', 'colour coded' and 'user friendly' way*. (Seema)

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At SBS Liam needed to raise funds to financially support his new team to work on the design and implementation. Bricolage provided the way to do this in the challenging context of the NHS's wider cost saving strategies; '*it's very difficult without new funding streams to set up the alternative thing, to do a different thing'* (Simon). Liam, utilising his research as leverage, made numerous applications for small pots of funding locally, none of which was intended to support homeless health or indeed local level programme innovation, but which could be repurposed to that end. He lobbied local Primary Care Trusts (PCTs) for 'year-end' money that was not committed. '*I'd say, listen, this (Homeless health) could be managed up stream. What do you think? And the sweet number was 70,000. I got £70,000 off each of them'*. The monies raised by Liam were bundled together to provide an initial fund to pay Frances and buy Simon out of his existing leadership role whilst they designed the programme and planned its implementation.

Enrolment and implementation required further resources although the bricolage of key actors was different in each case. For CCHC, the pressing concern was not financing staff time but finding the physical space to operate a health centre and the funding for building. Katie and her colleague's bricolage involved them identifying a resource very close at hand that might be repurposed; the small, rundown public park next to the community centre could potentially serve as the location for their GP practice. However, the park was owned by the local authority and not for sale. After lobbying various actors in the Local Authority, they finally they met a senior member of the neighbourhood council who enabled them to buy the park for a nominal cost. This was a fortuitous decision which Katie described as '*an anomaly': 'He was somebody who allowed things to happen*'. Appropriating the park and fundraising from trusts and charities meant they were able to build not only the health centre but

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also a community garden for the centre and a more attractive and useable public park.

The bricolage activities of key actors continued to sustain the innovations over time. Both CCHC and SBS created hybrid organisational forms. Liam, facing ongoing challenges to implement the programme, investigated organisational structures that would provide a vehicle for delivery and avoid NHS bureaucracy. Following Simon's experience converting his homeless health centre into a social enterprise, Liam established SbS as a charitable company. This legal body, separate to the NHS and governed by Trustees, provided organisational independence, fewer regulatory constraints and new funding opportunities. Fundraising from charitable trusts and foundations became a key source of financial support for the programme. Importantly SBS was a hybrid that was not entirely independent; it exclusively served and remained accountable to the NHS Trust. Similarly, whilst CCHC was embedded in mainstream GP services, some creative bricolage involved remodelling the traditional surgery governance structures and working practices of the GPs so they reflected the co-production ethos of the Community centre.

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Discussion and conclusions

Our paper makes an important theoretical and empirical contribution to debates on innovation in healthcare and questions the potential for EDI in resources constrained public health. Examining the role of bricolage in the innovation process provided an analytical tool to critically interrogate our empirical cases. It brought to the fore key themes in current debates - the processual, collective, networked and interested character of innovation in the sector – whilst drawing specific attention to the issue of

resources. Applying this framework to three EDI cases has enriched and extended those debates; first by broadening the focus beyond diffusion to the problematisation and emergence of innovative ideas from the bottom up, and second by revealing the bricolage that key actors undertake to mobilise necessary resources and underpin the innovation.

A number of insights emerged from our conceptual application. Exploring the translation process; the transformation of ideas on their journey into practice revealed the ways in which EDI was necessarily a collective endeavour from the start. Even where a single individual had identified a problem, the translation of that problem involved the enrolment of a network of interested staff and wider stakeholders. This assembling and alignment of interests was necessary to ensure that the innovation was collectively defined as essential and facilitated its embedding in the organisational context. In all three cases the problematisation itself was initially rejected by some stakeholders because it questioned existing organisational practice. Exploring the process of enrolment revealed the extended and time-consuming work of aligning multiple stakeholder interests and addressing the conflicts and resistance which emerged. Whilst existing literature has highlighted these issues at the diffusion stage, we have shown how they exist at the very start of the EDI process and throughout its journey.

The second set of insights emerged from examining the bricolage activities that underpinned the translation process. Unlike top-down policy implementation there were no specified budgets or infrastructure in place. Resources were required to underpin the process from the start, and these had to be acquired from somewhere. Extensive and often creative bricolage undertaken by key actors was a central aspect of the translation as they sought out, adapted and repurposed resources they

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found ‘to hand’ including the wider public and third sectors. Resources were tailored to the specific needs of the innovation, shaped by its organisational and collective context; this involved physical space and philanthropic funds at CCHC; local funding pots and alternative organisational structures at SbS, and staff labour and delivery models at MUp. Bricolage work was time consuming and not always successful, fundraising attempts failed or repurposed resources did not always work well. The MUp nurses for example struggled with their workload and managing their unpaid labour for the innovation with the daily expectations of their role.

Revealing the contingent and ad hoc character of EDI raises questions about the sustainability and success of these cases and others to transform public healthcare in the longer-term. Paradoxically our cases found it harder to raise financial resources within the NHS than as third sector organisations, yet embedding innovations in mainstream NHS provision helped ensure their sustainability in the longer term. Both SbS and MUp appeared to be at risk if funding models and partnership relations changed. Policy makers promoting EDI need to recognise the role played by Bricolage in the innovation process but also that limited internal resources and overstretched staff make bricolage more challenging. There is a need to formally support and sustain local innovations and implement strategies to embed them. A further question remains about the potential for and desirability of scaling up and rolling out these innovations beyond the local level. There is a need for scholarship that not only explores the variety of cases, contexts and outcomes of EDI in healthcare and the wider public sector but, putting the resource issue centre stage, addresses the scaling up question within the innovation process.

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Table 1 The cases

Name/ Year established	**Aims**	**Innovation**	**Location and funding**
Side by Side (SbS) 2010	To improve the experiences and outcomes of homeless people in primary and secondary care	Coordination of multidisciplinary teams (GPs, consultants, social workers, nurses, housing support, care navigators etc.) within a hospital setting to ensure homeless patients are cared for in a holistic way and discharged into an appropriate environment.	A third sector organisation, operating in a large NHS teaching hospital. Funded by the NHS, central and local government and charitable trusts
Moving Up (MUp) 2011	To support young people with acute conditions leaving paediatric care and transitioning to adult services	A programme consisting of a series of questionnaires that provide a way for clinicians and nurses from any specialism to work with young people prior to their transfer to adult services and embed transition requirements in practice.	A cross specialism group of nurses promote and deliver the (unfunded) programme in a large NHS teaching hospital.
City Community Health Centre (CCHC) 1997	To provide high quality co-produced primary care in a deprived urban community.	A community owned GP practice situated in a community centre facilitating social prescribing.	A Health centre/GP practice based within a third sector organisation and funded by the NHS, the Local Authority and charitable trusts.

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